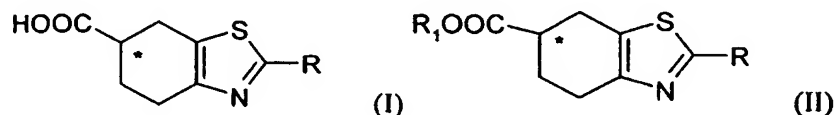


CLAIMS

1. A compound of formula (I) or of formula (II), either as a mixture of (R,S) enantiomers, or as a single (R) or (S) enantiomer, or a salt thereof,



wherein R is a protected amino group; and the asterisk * indicates the stereogenic carbon atom.

10 2. A compound as claimed in claim 1 or a salt thereof, as racemic (R,S) mixture, which is selected from:

- 2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid;
- 2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid;
- 2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid

15 methyl ester;

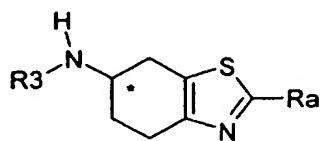
- 2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid ethyl ester;
- 2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid propyl ester;

20 • 2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid methyl ester;

- 2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid ethyl ester; and

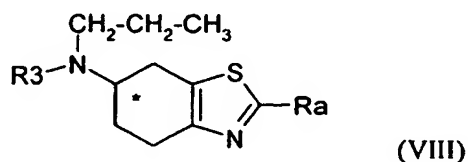
25 • 2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid propyl ester.

3. A compound of formula (I) or formula (II), or a salt thereof, according to claim 1, wherein the R group is a protected amino group in the form of an acylamino, carbamoyl, arylmethylamino, phthalimido or silylamino group.
4. A compound of formula (I) or formula (II), or a salt thereof, according to claims 1 or 3, as single (R) or (S) enantiomer.
5. A compound of formula (I) or formula (II), or a salt thereof, according to claims 1 or 3, as the single (S) enantiomer.
6. A compound of formula (I) or a salt thereof, according to claim 1, which is:
- 10 • (S)-2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid;
 - (S)-2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid;
 - (R)-2-acetylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid;
- or
- 15 • (R)-2-propionylamino-4,5,6,7-tetrahydro-benzothiazole-6-carboxylic acid.
7. A compound according to claims 4, 5 or 6, with enantiomeric purity of at least 96%.
8. The use of a compound of formula (I), or a salt thereof, as defined in claim 1, for the preparation of pramipexole or of a pharmaceutically acceptable salt thereof.
9. The use according to claim 8, comprising the alkylation of a compound of formula (VII) as the single (S) enantiomer



(VII)

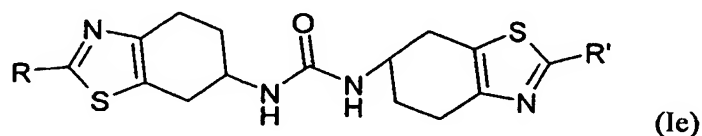
wherein R_a is a free or protected amino group, R_3 is hydrogen or a R_4 -O-CO-group, wherein R_4 is straight or branched C_1 - C_4 alkyl and the asterisk * has the same meaning as in claim 1, to obtain a compound of formula (VIII)



wherein R_a , R_3 and the asterisk * are as defined above, and, if necessary, the removal of the primary amino-protecting group and/or of the R_4 -OR-CO-group from the secondary amino group and, if desired, its conversion to a pharmaceutically acceptable salt thereof, characterized in that:

10 a) a compound of formula (VII), wherein R_a is a protected amino group and R_3 is as defined above, as the single (S) enantiomer, is prepared by rearrangement of a compound of formula (I), as the single (S) enantiomer, *via* formation of isocyanate, and subsequent addition of a nucleophilic solvent or subsequent quenching in water in the presence of an acidic agent; or

15 b) a compound of formula (VII), wherein R_a is a free amino group and R_3 is hydrogen, as the single (S) enantiomer, is prepared by rearrangement of a compound of formula (I), as the single (S) enantiomer, *via* formation of isocyanate, and subsequent addition of water, to obtain a compound of formula (Ie)



wherein R' has the same meaning as R defined above, and subsequent hydrolysis.

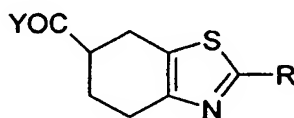
25

10. The use according to claim 9, variant a), wherein quenching in water in the presence of an acidic agent affords a compound of formula (VII), as defined in claim 9, wherein R_3 is hydrogen.

11. The use according to claim 9, variant a), wherein the nucleophilic solvent is a C_1 - C_4 alkanol, to obtain a compound of formula (VII), as defined in claim 9, wherein R_3 is a R_4 -O-CO- group, wherein R_4 is as defined in claim 9.

12. The use according to claim 9, variant a), wherein the rearrangement reaction is carried out according to Curtius in a nucleophilic solvent, via formation of a compound of formula of formula (Ia)

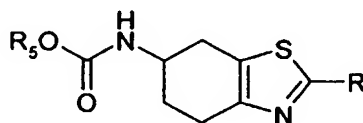
10



(Ia)

in which Y is N_3

and of a compound of formula (Id)



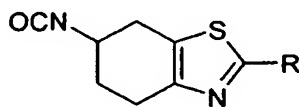
(Id)

15

wherein R_5 is a straight or branched C_1 - C_4 alkyl group, without recovery of the intermediates.

13. The use according to claim 9, wherein the rearrangement takes place via formation of a isocyanate of formula (Ic)

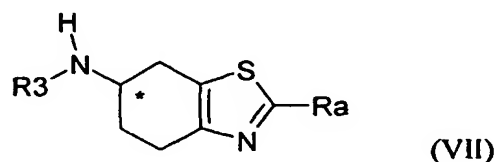
20



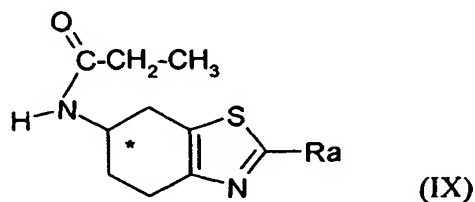
(Ic)

in which R is a protected amino group, and subsequent addition of a nucleophilic solvent or subsequent quenching in water in the presence of an acidic agent.

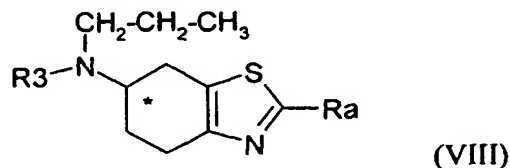
14. A process for the preparation of pramipexole, or a pharmaceutically acceptable salt thereof, comprising the acylation of a compound of formula (VII), either as the single (S) enantiomer or as mixture of (R,S) enantiomers



- wherein R₃ is hydrogen and Ra is a free or protected amino group,
by reaction with propionic anhydride, and subsequent reduction of the resulting compound of formula (IX)



- wherein Ra is as defined above, by treatment with an alkali metal borohydride and molecular iodine, to obtain a compound of formula (VIII)



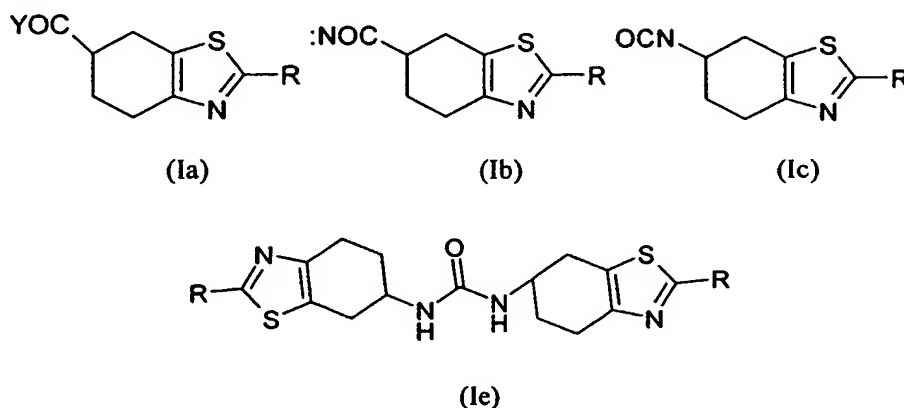
- wherein R₃ is hydrogen and Ra is as defined above;
followed, if necessary, by deprotection of the primary amino group and/or by resolution of the mixture of (R,S) enantiomers into the single (S) enantiomer and, if desired, by conversion of pramipexole to a pharmaceutically acceptable salt thereof.

15. A process according to claim 14, wherein the alkali metal borohydride is NaBH_4 in amounts of 1-5 mols per mole of compound of formula (IX) and the amount of iodine is 0.5-3 mols per mole of compound of formula (IX).

16. The use according to claim 9, wherein the alkylation of a compound of formula (VII), wherein R_3 is hydrogen and R_a is a free or protected amino group, as the single (S) enantiomer, is carried out according to the process of claim 14 or 15.

17. A compound of formula (Ia), (Ib), (Ic) or (Ie), either as mixture of (R,S) enantiomers or as a single (R) or (S) enantiomer

10



wherein Y is NHOCOR_4 , N_3 or NH_2 , in which R_4 is straight or branched

15 C_1 - C_4 alkyl and R is a protected amino group.